AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A micro perfusion device connectable to a perfusate supply and for obtaining at least one constituent of a body fluid, the device comprising:

a casing including a discharge channel;

a perfusion catheter including a proximal end in fluid communication with the discharge channel and a distal end having a distal ~~an intake~~ opening; and

a hollow injection needle including a proximal end having a proximal opening ~~in fluid communication with the perfusate supply~~ and a distal end having a discharge opening, wherein said injection needle is slideably displaceable through the casing and the perfusion catheter between a forward position and a rearward position, wherein the injection needle protrudes through ~~and seals~~ the distal ~~intake~~ opening of the perfusion catheter when the injection needle is in the forward position, wherein the discharge opening of the injection needle resides within the perfusion catheter ~~and the injection needle no longer seals the distal intake opening of the perfusion catheter~~ when the injection needle is in the rearward position, and wherein, in the rearward position, the proximal opening of the injection needle is adapted to be in fluid communication with the perfusate supply.

2. (Previously Presented) The micro perfusion device of claim 1, wherein the perfusion catheter comprises a catheter surface permeable to the at least one constituent.

3. (Previously Presented) The micro perfusion device of claim 1, wherein a cross-sectional shape of the injection needle and a cross-sectional shape of the perfusion catheter deviate from each other over a length along which the perfusion catheter abuts the injection needle, such that a flow cross-section for the perfusate remains between the injection needle and the perfusion catheter.

4. (Previously Presented) The micro perfusion device of claim 1, wherein the injection needle comprises an outer surface area which is not circular when seen in cross-section, over a length along which the perfusion catheter abuts the injection needle.

5. (Previously Presented) The micro perfusion device of claim 1, wherein the perfusion catheter comprises an inner surface area which is not circular when seen in cross-section, over a length along which the perfusion catheter abuts the injection needle.

6. (Previously Presented) The micro perfusion device of claim 1, wherein the injection needle attaches to the casing in its rearward position.

7. (Previously Presented) The micro perfusion device of claim 6, wherein the injection needle is attached to the casing in its rearward position by means of a locking connection.

8. (Previously Presented) The micro perfusion device of claim 1, wherein the injection needle further includes an opening in a proximal surface area of the injection needle, wherein the injection needle is slideably locked into the rearward position by a sealing ring removeably locked into said opening.

9. (Previously Presented) The micro perfusion device of claim 1, further comprising a supply catheter connected to an inner lumen enclosed by the injection needle, wherein said supply catheter can be slid together with the injection needle relative to the casing, and wherein said supply catheter is adapted to be in fluid communication with the perfusate supply.

10. (Previously Presented) The micro perfusion device of claim 1, wherein a sensor configured to measure the concentration of the at least one constituent is disposed within the discharge channel.

11. (Previously Presented) The micro perfusion device of claim 1, wherein a measuring means for measuring the concentration of the at least one constituent comprises a working electrode and a counter electrode, wherein the counter electrode is formed on a lower side of the casing, the lower side adapted to contact a tissue surface once the device has been positioned.

12. (Previously Presented) The micro perfusion device of claim 1, wherein a measuring means for measuring the concentration of the at least one constituent comprises a working electrode and a counter electrode, wherein the working electrode is formed in the discharge channel.

13. (Currently Amended) A micro perfusion device connectable to a perfusate supply and for obtaining at least one constituent of a body fluid, the device comprising:

a perfusion catheter comprising a distal end including a distal ~~an intake~~ opening and a proximal end in fluid communication with a discharge channel; and

a hollow injection needle comprising a distal end including a discharge opening and a proximal end including a proximal opening ~~adapted to be placed in fluid communication with the perfusate supply~~,

wherein said injection needle is slideably displaceable through the perfusion catheter between an extended position and a retracted position,

wherein the injection needle protrudes through the distal ~~intake~~ opening of the perfusion catheter when the injection needle is in the extended position,

wherein the discharge opening of the injection needle resides within the perfusion catheter when the injection needle is in the retracted position,

wherein the proximal opening of the injection needle is adapted to be in fluid communication with the perfusate supply when the injection needle is in the retracted position; and

wherein, when the injection needle is in the retracted position and perfusate is flowing from the discharge opening of the injection needle, body fluid is sucked into the perfusion catheter.

14. (Previously Presented) The micro perfusion device of claim 13, further comprising a supply channel connectable to the perfusate supply, wherein the supply channel is adapted to be in fluid communication with the proximal end of the injection needle when the injection needle is in the retracted position, the supply channel comprising two sealing rings encircling the injection needle, the two sealing rings configured to releasably lock the injection needle into the retracted position.

15. (Previously Presented) The micro perfusion device of claim 14, wherein the injection needle further comprises an opening in the surface of the proximal end of the injection needle, wherein the two sealing rings releasably lock the injection needle into the retracted position by being partially disposed within said opening in the surface of the proximal end of the injection needle when the injection needle is in the retracted position.

16. (Previously Presented) The micro perfusion device of claim 13, further comprising a sensor configured to provide information regarding the at least one constituent of the body fluid.

17. (Previously Presented) The micro perfusion device of claim 16, wherein the sensor is disposed within the discharge channel.

18. (Previously Presented) The micro perfusion device of claim 16, wherein the sensor is external to the device.

19. (Previously Presented) The micro perfusion device of claim 18, further comprising:

a supply channel in fluid communication with the proximal end of the injection needle;

a supply catheter in fluid communication with the supply channel and configured to be placed in fluid communication with the perfusate supply;

an external micro pump adapted to force the perfusate through the supply catheter and the supply channel and into the injection needle;

a discharge catheter fluidly connected to the discharge channel and configured to transport the perfusate to the sensor;

a collecting container configured to collect the perfusate for disposal; and

an evaluation component electronically connected to the sensor, the evaluation component configured to ascertain information regarding the at least one constituent and display the information on a display.

20. (Previously Presented) The micro perfusion device of claim 19, further comprising:

a microprocessor for the evaluation component, the microprocessor adapted for location separate from the micro perfusion device; and

a battery configured to provide power to the device, the battery also located for location separate from the micro perfusion device.

21. (Previously Presented) The micro perfusion device of claim 13, further comprising a working electrode configured to provide information regarding the at least one constituent of the body fluid.

22. (Previously Presented) The micro perfusion device of claim 21, further comprising a casing and a working electrode, wherein the hollow injection needle is slideably displaceable through the casing, wherein the casing is connected to the proximal end of the perfusion catheter, wherein the working electrode is located within the casing on an inner wall of the discharge channel, and wherein an adhesive patch on a lower side of the casing is configured to serve as a counter electrode to the working electrode.

23. (Previously Presented) The micro perfusion device of claim 13, wherein the injection needle is configured to provide support to the perfusion catheter.

24. (Previously Presented) The micro perfusion device of claim 23, wherein the injection needle and the perfusion catheter are in contact for a full length of the injection needle within the perfusion catheter, the injection needle and the perfusion catheter providing a flow path configured to allow fluid passage.

25. (Currently Amended) A method of obtaining at least one constituent of a body fluid, comprising:

providing a perfusion catheter comprising a proximal end in fluid communication with a discharge channel and a distal end including a distal ~~an intake~~ opening;

providing a hollow injection needle slideably displaceable in the perfusion catheter and including a proximal end capable of being placed in fluid communication with a perfusate and a distal end including a discharge opening;

~~sealing the distal intake opening in the distal end of the perfusion catheter by~~ extending the distal end of the injection needle through the distal ~~said intake~~ opening of the perfusion catheter; and

inserting the perfusion catheter into a tissue containing the at least one constituent when the distal end of the injection needle is protruding from the distal end of the perfusion catheter.

26. (Previously Presented) The method of claim 25, further comprising retracting the injection needle until the discharge opening of the injection needle is within the perfusion catheter.

27. (Currently Amended) The method of claim 26, wherein retracting the injection needle positions the proximal opening in fluid communication ~~establishes a fluid connection~~ with the perfusate.

28. (Previously Presented) The method of claim 26, further comprising causing perfusate to flow through the injection needle, out the discharge opening of the injection needle, and into the perfusion catheter.

29. (Previously Presented) The method of claim 28, wherein the perfusate flows in the direction of the discharge channel in a lumen defined between the injection needle and the perfusion catheter.

30. (Previously Presented) The method of claim 29, further comprising absorbing the at least one constituent from the body fluid into the perfusate through at least one opening in the perfusion catheter, wherein the at least one constituent is pulled into the lumen across a concentration gradient created as the perfusate is guided away from the discharge opening in the distal end of the injection needle.

31. (Previously Presented) The method of claim 30, further comprising causing the perfusate and the at least one constituent to flow out of the lumen through the discharge channel.

32. (Previously Presented) The method of claim 26, further comprising providing a sensor to ascertain information about the at least one constituent, the sensor being placed downstream of the perfusion catheter.

33. (Previously Presented) The method of claim 26, further comprising providing a working electrode in the discharge channel and providing a counter electrode to the working electrode.

34. (Currently Amended) A method of obtaining at least one constituent of a body fluid, comprising:

providing a perfusion catheter comprising a proximal end in fluid communication with a discharge channel and a distal end including a distal ~~an intake~~ opening;

providing a hollow injection needle slideably displaceable in the perfusion catheter and including a proximal end capable of being placed in fluid communication with a perfusate and a distal end including a discharge opening;

extending the distal end of the injection needle through the distal ~~intake~~ opening of the perfusion catheter;

inserting the perfusion catheter into a tissue containing the at least one constituent when the distal end of the injection needle is protruding from the distal end of the perfusion catheter;

retracting the injection needle until the discharge opening of the injection needle resides within the perfusion catheter; and

causing perfusate to flow from said discharge opening into the perfusion catheter.

35. (Previously Presented) The method of claim 34, wherein the flowing perfusate causes body fluid to be sucked into the perfusion catheter.

36. (Previously Presented) The method of claim 35, wherein the perfusate flows in the direction of the discharge channel in a lumen defined between the injection needle and the perfusion catheter.

37. (Previously Presented) The method of claim 34, further comprising absorbing the at least one constituent from the body fluid into the perfusate through at least one opening in the perfusion catheter, wherein the at least one constituent is pulled into the lumen across a concentration gradient created as the perfusate is guided away from the discharge opening in the distal end of the injection needle.

38. (Previously Presented) The method of claim 37, further comprising causing the perfusate and the at least one constituent to flow out of the lumen through the discharge channel.

39. (Currently Amended) The method of claim 34, further comprising ~~sealing the distal intake opening in the distal end of perfusion catheter by~~ extending the distal end of the injection needle through the distal ~~said intake~~ opening of the perfusion catheter.

40. (Previously Presented) The method of claim 34, further comprising providing a sensor to ascertain information about the at least one constituent, the sensor being placed downstream of the perfusion catheter.

41. (Previously Presented) The method of claim 34, further comprising providing a working electrode in the discharge channel and providing a counter electrode to the working electrode.